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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,985	12/19/2000	Hiroshi Uchida	Q58538	5170

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EXAMINER

ZUCKER, PAUL A

ART UNIT PAPER NUMBER

1621

DATE MAILED: 04/04/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/719,985

Applicant(s)

UCHIDA ET AL.

Examiner

Paul A. Zucker

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7,9-11 and 13-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☒ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Current Status*

1. This action is responsive to Applicants' amendment of 13 January 2003 in Paper No 7.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Applicant's cancellation of claims 4, 8, and 12 is acknowledged.
4. Applicant's addition of new claims 19-30 is acknowledged.
5. Claims 1-3, 5-7, 9-11 and 13-30 are pending.
6. The objections to the claims set forth in paragraphs 2 and 3 of the previous Office Action in Paper No 6 are withdrawn in response to Applicant's amendment.
7. Claims 1-3, 5-7, 9-11 and 13-30 are finally rejected under 35 U.S.C. 102(b) as being anticipated by Atkins et al (US 5,861,530 01-1999). For the purposes of this rejection claim 16 is considered to depend from claim 1. Atkins discloses (Column 5, lines 24-31; column 5, lines 16-59 and tables indicated therein) a process for the production of esters of lower aliphatic carboxylic acids via the reaction of the corresponding carboxylic acid with an olefin in the presence of a heteropolyacid catalyst and water. Atkins discloses (Column 13, lines 17-21) the reaction of ethylene with acetic acid. Atkins further discloses (Column 2, lines 26-46; column 12, line 52- column 13, line 17, for example) heteropolyacid catalysts and salts thereof corresponding to those instantly claimed. Atkins discloses (Column 3, lines 46-51) the use of ethylene, propylene or mixtures thereof as the olefin.

Atkins is silent with regard to the amount of butanes in ethylene when ethylene alone is used as the olefin. Atkins does however disclose (Column 3, lines 49-51) that alkanes are expected to be admixed therewith. The Examiner therefore presumes, in the absence of evidence to the contrary, that the ethylene employed by Atkins contains negligible or undetectable amounts of butenes. Atkins disclosure is therefore presumed by the Examiner to meet the recited upper limit on the amounts of butenes since 0 ppm meets the instant limitation. This presumption is further supported by the fact that Atkins distinguishes between the use of ethylene and mixtures of ethylene and propylene.

With regard to the claim 5 which presently recites limitations on the amount of olefin equivalent which produces butenes, the Examiner notes that the amount of olefin equivalent which yields butenes used in the process of Atkins is zero. Atkins teaches (Column 1, lines 42-55) the olefin equivalent diethyl ether which yields ethylene and not butenes.

Atkins therefore anticipates instant claims 1-3, 5-7, 9-11 and 13-30.

***Examiner's Response to Applicants' Arguments with Regard to This Rejection***

8. Applicants present arguments with regard to this rejection. The Examiner responds to these below:
  - a. Applicants argue (Amendment, page 9, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs) that the exclusion of polypropylene (the Examiner assumes that "propylene" is intended) overcomes Atkins as prior art. The Examiner disagrees. Applicants

have provided no argument or evidence that there is any butene in the feed of Atkins. The amount of propylene was never at issue since it was already excluded in the claims as originally presented.

- b. Applicants further argue that one of skill in the art would not view Atkins as disclosing Applicants' recited butene limitations. The Examiner disagrees and points out that Atkins' silence with regard to butene concentration would be taken as an indication that negligible amounts of butanes are present since Atkins is obviously concerned with the presence of other alkenes such as propylene.

Applicants' argument filed 13 January 2003 have been carefully considered but are not persuasive for reasons set forth above.

9. Claims 1-3, 5-7, 9-11 and 13-30 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Atkins et al (US 5,861,530 01-1999) as applied to claims 1-3, 5-7, 9-11 and 13-30 above, and further in view of Froom et al (US 6,187,949 02-2001).

Instantly claimed is a process for producing an ester by reacting a carboxylic acid and ethylene in the vapor phase in the presence of a heteropolyacid catalyst in which limitations are placed on the permitted amounts of butenes and olefin equivalents (compounds capable of producing olefins under the conditions of the reaction).

The difference between the process taught by Atkins and the instantly claimed process is that Atkins is silent with regard to the presence of butenes in the ethylene starting material and therefore also controlling the limits of these impurities as is instantly claimed.

Froom teaches (Column 8, line 42, Table 8) 0% butenes in the feed gas. This teaching in combination with that of Atkins renders instant claims 1-3 obvious.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art. The suggestion to combine can be found in the common field of the invention. Further suggestion for the combination of the two references can be found in the fact that Atkins is cited (Patent face, right column, first line) by Froom. The process of Froom corresponds to an optimization of the process of Atkins and the combination would therefore be expected by one of ordinary skill in the art to be successful.

***Examiner's Response to Applicants' Arguments with Regard to This Rejection***

10. Applicants argue that butanes are produced in the ester formation process and that therefore Froom's teaching of recycling is also a teaching of butenes in the reaction feed. The Examiner disagrees for three reasons:

- a. Applicants' assumption that butenes are formed in the process of Froom, under the conditions of Froom, is not supported by facts on the record.

- b. Even if one were to assume that Applicants are correct in their conclusion that butenes form as the reaction proceeds, this fact does not obviate Froom's teaching that the *initial* feed contains no butenes.
- c. Even if one were to assume that Applicants are correct in their conclusion that butenes form as the reaction proceeds, Applicants' *own* process as claimed produces butenes, as demonstrated by Applicants' data, and is therefore not distinguished from the process taught by Atkins and Froom.

Applicants' argument filed 13 January 2003 have been carefully considered but are not persuasive for reasons set forth above.

### ***Conclusion***

11. Claims 1-3, 5-7, 9-11 and 13-30 are pending. Claims 1-3, 5-7, 9-11 and 13-30 are rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 703-306-0512. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 703-308-4532. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

Paul A. Zucker  
Patent Examiner  
Technology Center 1600

April 3, 2003



ACTING FOR  
Johann Richter, Ph.D., Esq.  
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